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## TRUSTS REPORT ON WINCH SKIDDING

Two skidding winches were placed into operation in Tsinglokskiy Timber Center, Volzhsk Timber Management, Mariles Trust (K. D. Doroshevskiy, chief engineer) in April 1949. In May, four more skidding winches were installed within the Volzhsk Timber Management.

At the Tsinglokskiy Timber Center, logs are skidded by winches to a narrow-gauge railroad 700 meters long, which connects with a wide-gauge railroad. Horses are used for motive power on the narrow-gauge railroad line. The winches are powered by a PES-60 mobile electric power plant.

Trees at the timber center are pine and some spruce and birch. They grow on slightly swampy soil. Resources amount to 120 - 150 cubic meters per hectare.

The center's continuous method brigade, which performs the cycle of operations from felling to loading onto the wide-gauge railroad, consists of 45 - 50 men. After introduction of winch skidding, brigade productivity per man per day rose within a month from 1 - 1.2 cubic meters to 2 - 2.5 cubic meters of timber. The amount of skidding performed by each winch working within a radius of 250 meters reached 42.9 cubic meters per day within a month after installation.

Within the Kostromales Trust, winch skidding averaged 43 cubic meters of timber per winch per day during the first quarter 1949.

In Novgorodles Trust, winch skidding averaged 32 cubic meters per winch per day in the first quarter 1949.

In Timiryazevskiy Timber Management, Tomles Trust, average output per winch per day averages 40 - 50 cubic meters.

In Novsibles Trust, winch skidding was inaugurated in June 1949 at the Nechnayevskiy Model Experimental Timber Management of the trust.

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Winches had been delivered to Kotlasles, Vologdoles, Kirles, and Molotov-bumles trusts by June 1949, but were not yet in use as of that date.

#### LOADS LOGS BY WINCH

The Sonskiy Timber Management has been successfully using a single-drum winch for loading logs onto normal-gauge railroad cars. For this purpose, a TL-1 electric winch with a load capacity of one ton, powered by a "Ural" P-42-4 motor with a capacity of 5.8 kilowatts, is used.

The winch is mounted on a 4.5-meter-high platform resting on four piles driven into the ground. A booth, 2 by 3 meters, is provided on the platform for housing the winch and sheltering its operator while he operates the jib during loading operations.

Electric power is provided by a PES-50 mobile electric power plant. When the PES-50 powers two winches simultaneously, the peak load on it reaches 60 - 70 amperes at 380 volts.

A crew of four men is needed to load logs by this method: the winch operator, two men who hook the logs to the jib, and one man who arranges them on the railroad car.

#### FLUSH SAWING IN TREE FELLING PROPOSED

According to Engineer G. M. Parfenov, chief mechanic of the Sverdles Trust, it has been standard practice in felling trees 30 centimeters and more in diameter for stumps left standing not to stand higher above the root swell than one third the diameter of the tree at the cutting point; in felling smaller trees, for the stump height above the root swell not to exceed 10 centimeters. However, since the root swell is usually 5 - 10 centimeters above the surface of the ground, the stump height exceeds the one-third-diameter height from ground level. Actually then, 15 - 55 centimeters of tree heights are left standing in the cutting area as stumps; these stumps represent 2.5 - 3.5 percent of the total volume of wood obtained from the trees and often represent the very best quality of wood.

Parfenov explained that, at present, when electric saws are used and when the sawing operation is timed in seconds, sawing trees off flush with the ground does not constitute a great hardship for the sawyers. The fallers used VAKOPP electric saws in an area covered with 52 centimeters of snow. The observations were tabulated as follows to show comparative results obtained from felling trees flush with the ground and with stumps left standing:

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Diam of Tree at Chest Height	<u>Felling Time, Including Preparatory Work</u>				Time Dif- ferential (Man-Sec)	Length of Stump (cm)	Vol of Stump (cu m)	Vol of Tree Trunk (not inc stump) (cu m)	Ratio of Vol of Stump to Vol of Tree Trunk (%)
	<u>With Stump</u>		<u>Flush With Ground</u>						
	<u>Diam of Cut (cm)</u>	<u>Man-Sec</u>	<u>Diam of Cut (cm)</u>	<u>Man-Sec</u>					
22	24	232	28	272	40	10	0.0054	0.302	1.79
24	26	250	30	300	50	12	0.0078	0.369	2.11
26	29	262	31	320	58	14	0.0112	0.447	2.50
32	36	300	40	370	70	16	0.0175	0.707	2.50
34	40	330	45	420	90	16	0.0206	0.808	2.55
36	42	350	47	445	95	18	0.0279	0.910	3.10

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One objection to felling trees flush with the ground arises where the ground is deeply covered with snow. However, the observations tabulated above show that 52 centimeters of snow did not reduce the labor productivity of the workers. Also, in most logging regions of the USSR much snow lies on the ground only until 15 January or 1 February. When snow lies deeper on the ground, it is true that labor productivity will suffer. The loss in labor productivity, however, is compensated for by the additional amounts of high-quality wood obtained and the greater facility of skidding operations when stumps offer no interference.

#### MOBILE POWER PLANT UNITS BEING DELIVERED

Mobile, as well as stationary power plants, are required to power the increasing number of electric saws, winches, and other equipment being used in the Soviet timber and lumbering industry. Mobile power plants operating on local fuel are especially needed.

A 40-kilowatt mobile steam plant of this type has been put into serial production and many units have already been delivered to logging enterprises.

The plant is installed in an enclosed narrow-gauge railroad car. Total weight of the plant and car does not exceed 16 tons. The car has a metal framework and double walls. It is 8.5 meters long, 2.3 meters wide, and stands 3.1 meters high above the rails. Manually operated brakes are applied to all four wheels. Maximum permissible speed of the plant is 10 kilometers per hour. In operating position, the plant is placed on eight jacks resting on the ground.

The rectangular water-tube steam boiler has the following characteristics:

Steam output	600 kg/hr
Steam pressure	25 atm
Temperature of superheated steam	320°
Heating surface of boiler	16 sq m
Heating surface of economizer	9.8 sq m
Heating surface of steam superheater	3 sq m
Area of fire grate	0.7 sq m
Boiler capacity (water)	250 liters

The generator is a synchronous three-phase generator with 40-kilowatt, 50-kilovolt-ampere, 380-volt capacity. It makes 750 revolutions per minute.

#### WOOD-GAS GENERATOR BURNS LONG LENGTHS

Since 15 May 1949, the Kosulinskiy Timber Management of Sverdles Trust has been using for timber transport a ZIS-21 truck with a gas generator which normally burns wood 0.5 meter long and 60-80 millimeters thick. Built according to a plan of the Ural Wood Technical Institute, its capabilities are being tested by this timber management.

As of 5 June, the truck had covered 1,200 kilometers and transported 252 cubic meters of wood. Empty, it travels 19.5 to 22.5 kilometers per hour; loaded, 15 to 16.

Fuel consumption has proved to be lower when long lengths of wood are burned than when blocks are used, a fact which will reduce transport costs. The tests indicate that this type of gas generator should be placed into serial production.

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## PROPOSES FASTER FLOATING NORMS

P. Selivanov of the Central Scientific Research Institute of Timber Floating writes that at a time when all branches of the Soviet economy are converting to progressive norms, timber floating on the Kama and Volga rivers is still on the basis of low tariff norms of commercial speeds retained from times when unpropelled rafts floated at a rate of speed below that of the current. Although all rafts have been steam tugged on the Kama and Volga for years, the norms of commercial speeds, which are 95 kilometers per 24 hours at times of high water and 85 kilometers at times of normal flow, are still in effect.

On the basis of actual and Stakhanovite performances, Selivanov proposes the following new progressive norms for the various months of the year to speed raft floating of timber:

<u>Month</u>	<u>Present Norm</u> (km/hr)	<u>Progressive Norm</u> (km/hr)
May	95	160
Jun	95	140
Jul	95	120
Aug	95	110
Sep	95	100

## EXTRACT INDUSTRY NEEDS MORE BARK

D. Nikitin of the Main Administration of the Tanning Extract Industry appeals to the timber industry to produce more fir bark which is used in producing leather-tanning extracts. In recent times, it has paid too little attention to providing fir bark, even though bark production would help cut logging costs and at the same time help provide tanning extract which is badly needed by the leather products industry.

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